The Planning Process

Step 3: Formulation of Alternative Plans

REFERENCES:

- ER 1105-2-100, Planning Guidance Notebook, Chapter 2
- Planning Manual - Chapter 8
- WRC’s Principles & Guidelines

Plan Formulation is defined as:

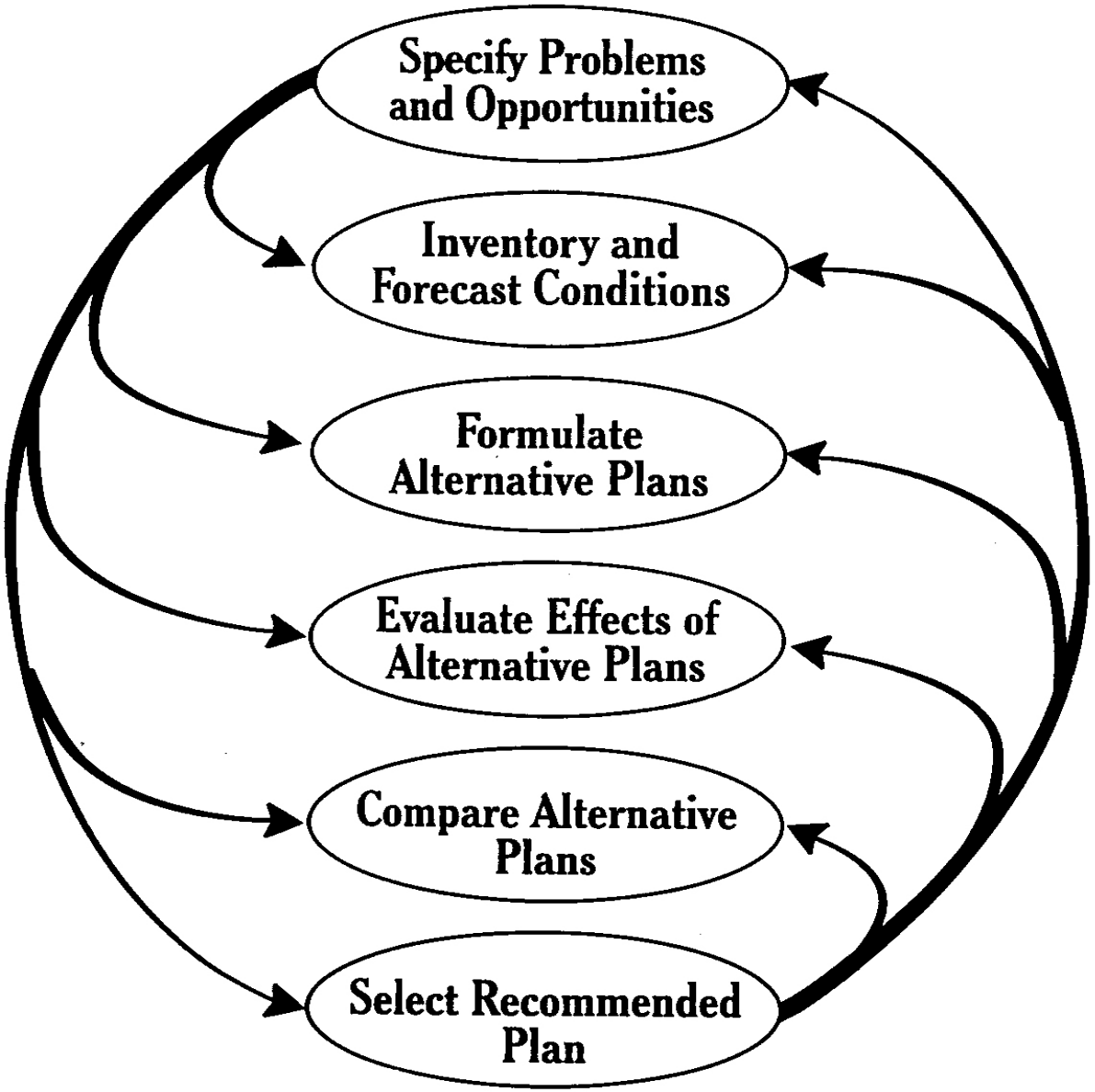
The process by which plans are created

The Corps uses the term "Formulation" in different ways:

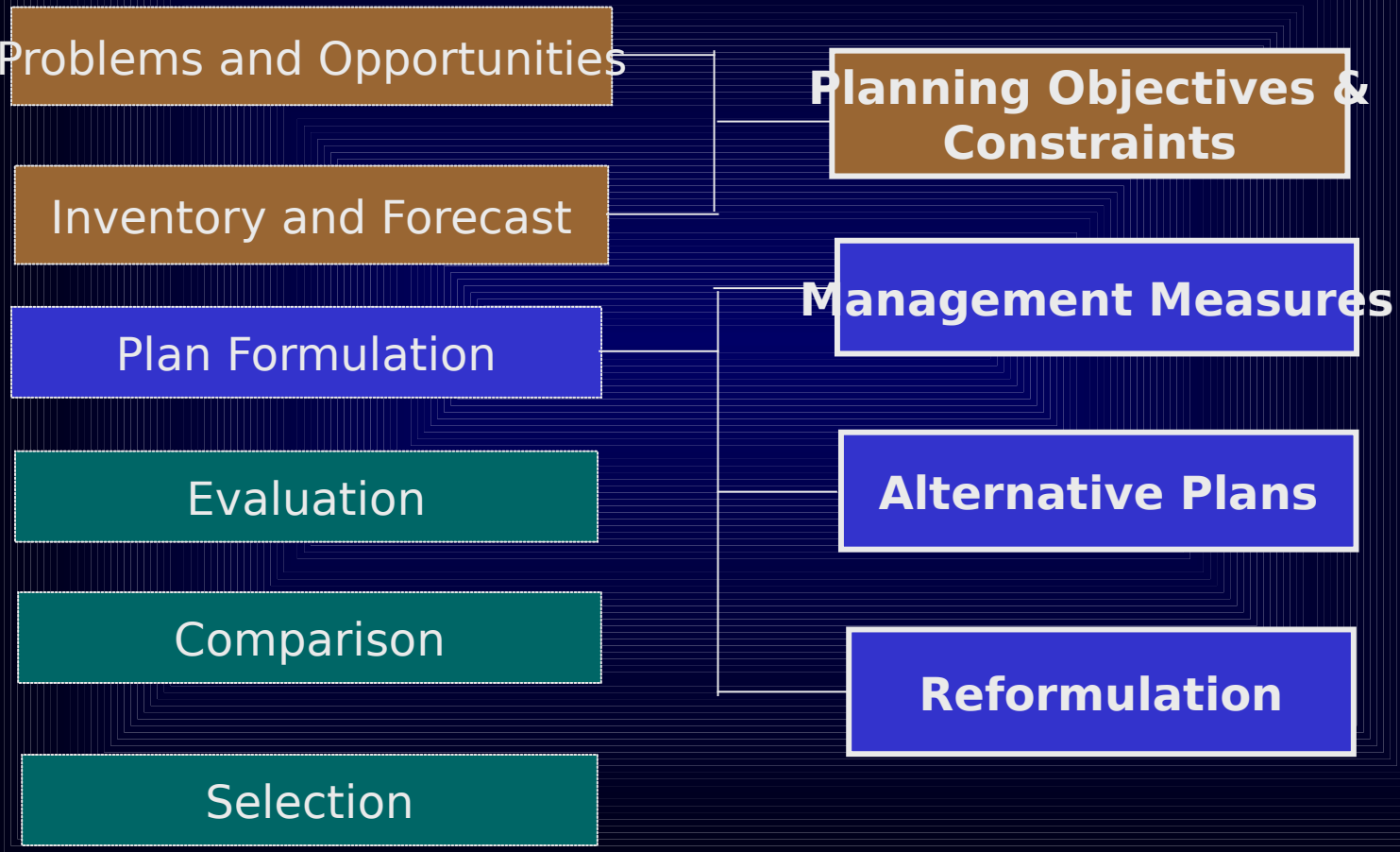
- Broadly: What "formulators" do – Use of authorities, report preparation, consensus building, leading the study team through the 6-step process, etc.
- Leading the study team through the 6-step planning process
- Specifically: Planning Manual definition – Step 3 of the 6-step planning process

"The process of building plans that meet the planning objectives and avoid the planning constraints."

PLANNING PROCESS



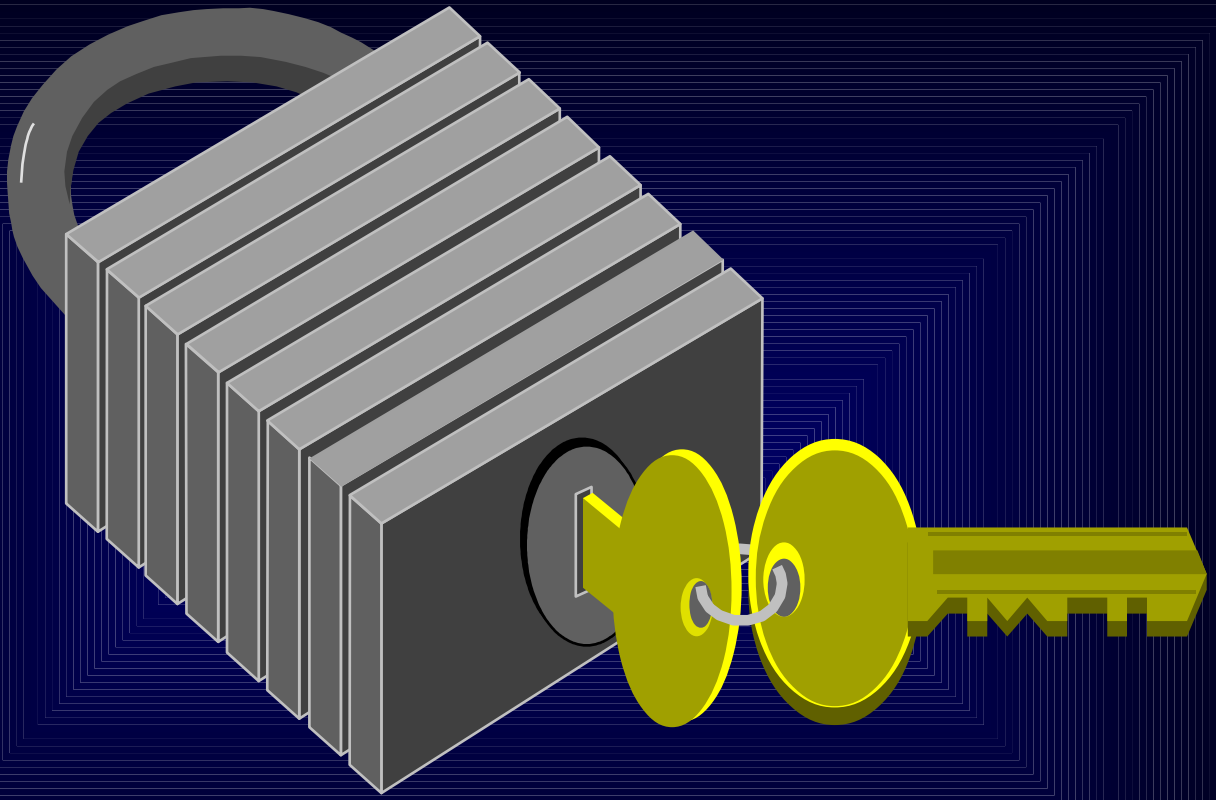
Planning Steps and Plan Formulation



FORMULATION PHASES

- Identify management measures: define the building blocks that address the planning objectives.
- Formulate alternative plans : mix and match measures; consider combinability and dependency.
- Iterate: do it over again - reformulation

Where to Start?



With the planning objectives/constraints (Based upon the without condition)

Management Measures

- A management measure is either a feature or an activity that can be implemented at a specific geographic site to achieve desired effects
- A feature is a physical element that generally requires site construction
- An activity is typically linked with features and may involve changes in operations or institutional actions

EXAMPLE MANAGEMENT MEASURES

FEATURES

- breakwaters
- jetties
- channels
- dams
- levees
- relocations
- water pumps
- fences
- food plots
- roosting platforms

ACTIVITIES

Actions:

- modify water releases
- seed, cut, burn vegetation
- pesticide application

Policies Affecting Actions:

- vessel transit restrictions
- zoning restrictions
- grazing agreements

Criteria for a Management Measure

- Addresses one or more objectives
- Defines a feature or activity, where it would be located and what it is comprised of
- Able to estimate what it will cost in $$$
- Able to estimate what, and how much, you get from it (output)

How to Identify Management Measures?

How to Identify Management Measures?

- There are several ways
- One of the most effective ones is to brainstorm with others
  - This builds team work
  - Helps to identify relevant measures
  - Brings together people with different backgrounds, skills and interests.
  - Can be done “in-District”, “in-Corps” or “publicly”

BRAINSTORMING PROCESS

1. Define problem.
2. Individual silent listing of ideas.
3. Group recording of ideas.

- Group assessment of ideas.
- Group presentations.

The objective is...

BRAINSTORMING RULES

- **NO EVALUATION**
- **NO JUDGMENT**
  - Quantity counts.
  - Time is limited.
  - Follow the process.

Let Us Practice - Brainstorming

Alone, take three minutes to see how many measures you can come up with

Let Us Practice - Brainstorming

Ten Minute Exercise: Now break into your groups and see how many more measures you can come up with

Prepare to report results to the class

Let Us Practice – Report Out

\# Number of Ideas

* Recommended Idea

** Most Creative Idea

WHAT CAN YOU BRAINSTORM?

- Stakeholders
- Problems and Opportunities
- Information to Include in Inventory
- Future Without Condition Assumptions
- Solutions - Measures and Plans
- Categories of Effects
- Tasks in Project Management Plan
- Report “Table of Contents”
- Report Readers
- Mailing List

“Think left and think right and think low and think high. Oh, the thinks you can think up if only you try.”

Oh the Thinks You Can Think, by Theodor S. Giesel (aka Dr. Seuss)

…by the way:

- You used PLANNING OBJECTIVES to start formulating alternative plans.
- When you identified your "recommended plan" you conducted the next three planning steps:
  - Ideas were EVALUATED
  - Ideas were COMPARED
  - The best idea was SELECTED

How to Identify Management Measures - More

- Interviews-in District
  - Office “historians”
  - Technical experts in many disciplines
- Interviews-go public
  - Public/Scoping Meetings
  - Other Districts
  - Other Agencies, especially resource agencies for restoration projects

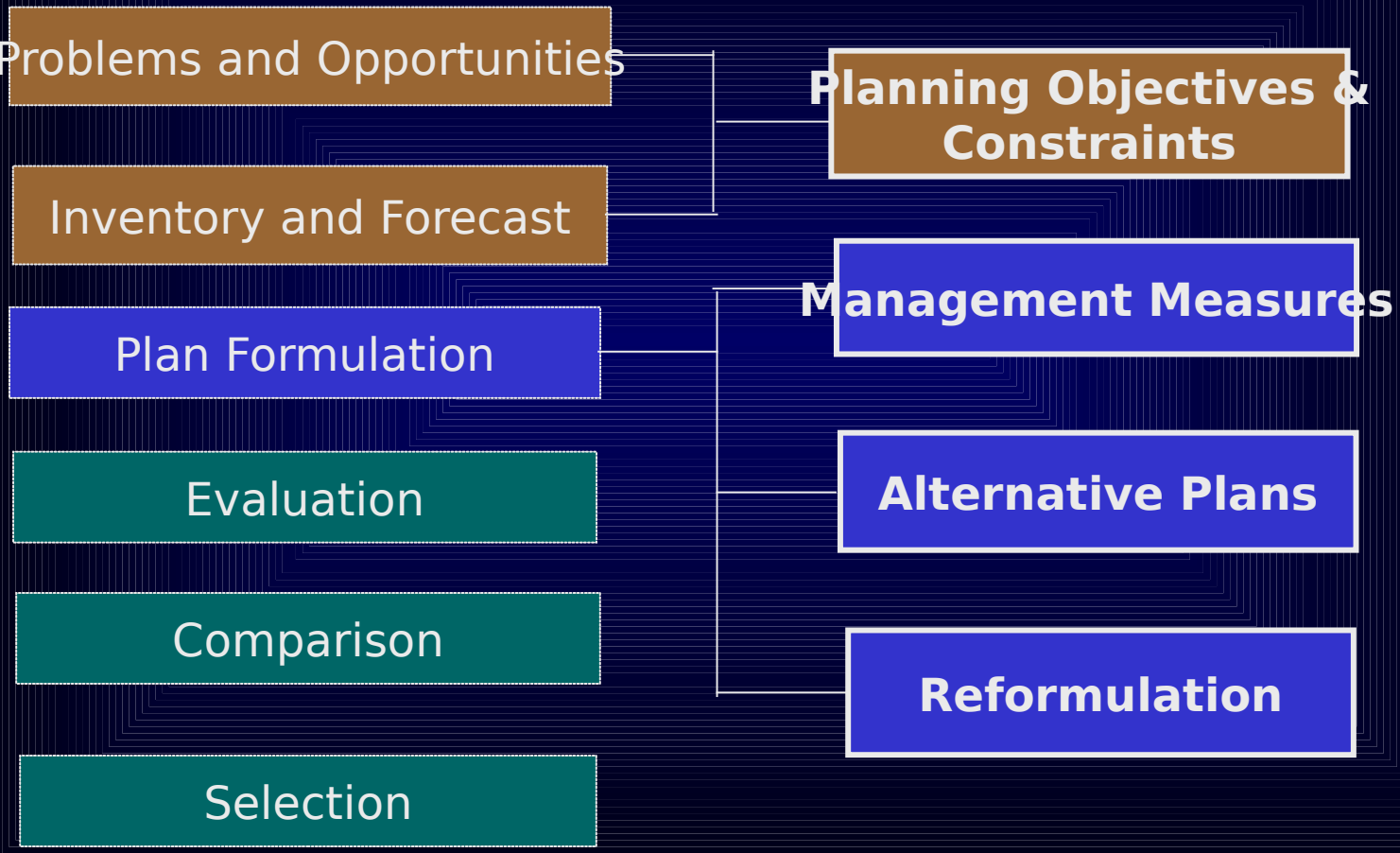
How to Identify Management Measures–More

- Site visits with Interdisciplinary team
  - District
  - Non-Federal Agencies and Organizations
  - Resource agencies
- Consult documents
  - Similar projects
  - Same resource
- Consult texts
- Make checklists

Identification of Management Measures – Summary

- Don’t reinvent the wheel
- Don’t stay stuck in old ruts

Planning Steps and Plan Formulation



SCALES - “SIZING”

- Physical properties: depth, length, height, width, area, quality, density, intensity
- Composition: materials, methods
- Location: footprint vs. effects, real estate
- Timing and duration: permanent vs. temporary, demonstration, one-time vs. recurring, order of implementation, phased implementation, environmental windows.

Scale affects costs, benefits, impacts

Sizing/Scaling

10 percent chance of containing the one percent flow event

50 percent chance of containing the one percent flow event

90 percent chance of containing the one percent flow event

ALTERNATIVE PLANS, OR DIFFERENT SIZES OF THE SAME PLAN?

Definitions

- Combinability – Measures that are not mutually exclusive are combinable
- Dependency – A measure may be necessary for the function of another measure
- Mutually exclusive –
  - Location – can’t occupy the same physical space
  - Function – measures that would work against each other
  - Overlapping – smaller scale or subset of another measure

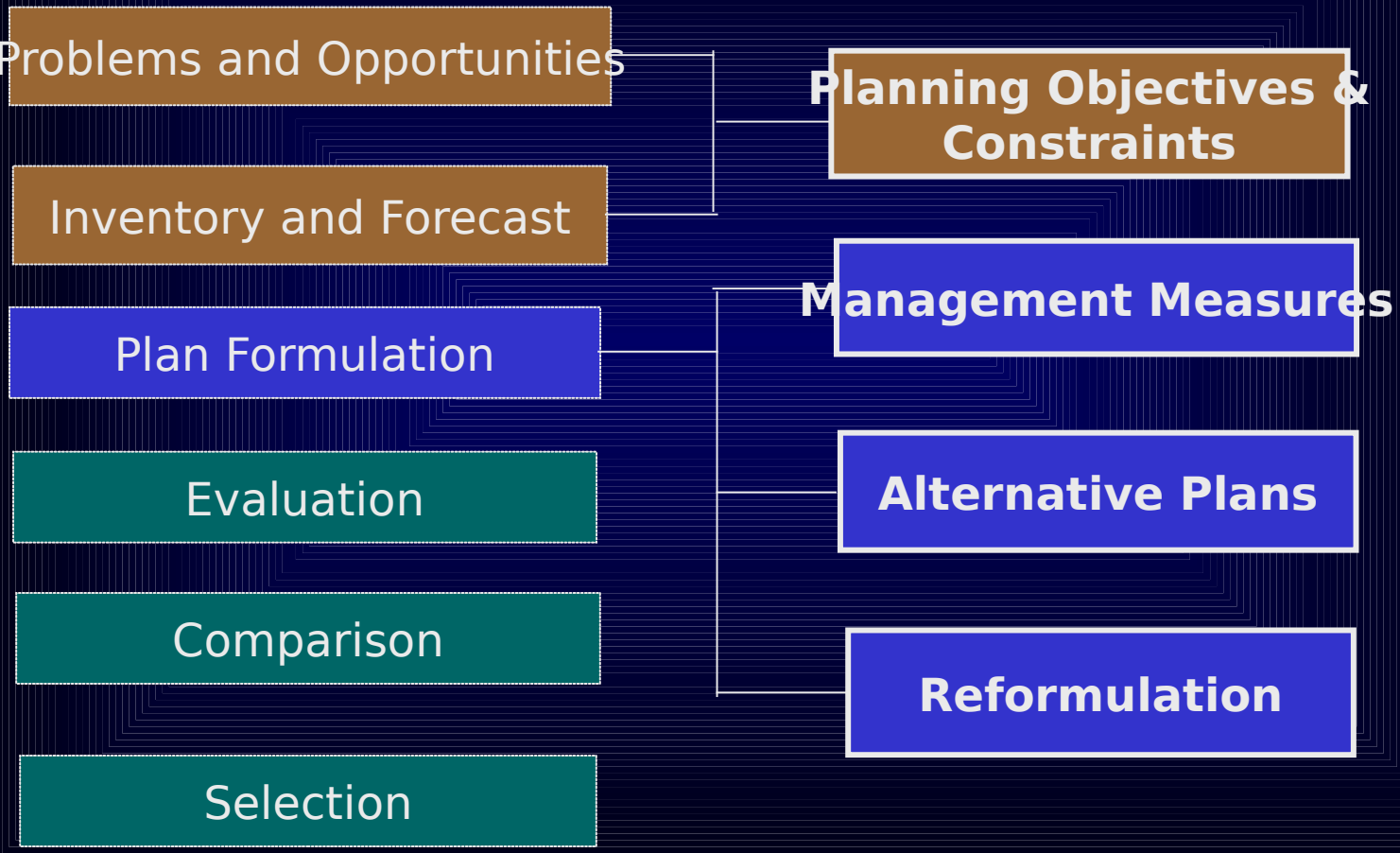
Screening Management Measures

- At this point in the process, your team has probably identified a lot of measures
- Can any of them be eliminated. If so, why?
  - Severe and obvious adverse impacts
  - Dominated measures – same output less cost or greater output for the same cost
  - Formulation criteria provide a framework for screening

Screen Measures based on Formulation Criteria

- Completeness
- Effectiveness
- Efficiency
- Acceptability

Planning Steps and Plan Formulation



FORMULATION PHASES

- Identify management measures: define the building blocks that address the planning objectives.
- Formulate alternative plans or programs: mix and match measures; consider combinability and dependency.
- Iterate: do it over again.

Guidance on Alternative Plans

PRINCIPLES & GUIDELINES

(Section VI, paragraph 1.6.1.a)

"An alternative plan consists of a system of structural and/or nonstructural measures, strategies, or programs formulated to alleviate problems or take advantage of specific opportunities associated with water and related land resources in the planning area."

PRINCIPLES & GUIDELINES
Section VI - Alternative Plans

1.6.1. General.

a. Definition of alternative plans
b. Plans should be significantly different
c. Don’t limit plans to agency’s authorities
d. Comply with law or propose changes
e. Consider measures for water conservation
f. Consider nonstructural measures
g. Protect environment through mitigation
h. Consider plans of others
i. Consider other implementation schedules

Criteria for an Alternative Plan

- Purpose: addresses one or more objectives
- Subject: defined by its management measures
- Site: location / footprint; area affected
- Cost friendly: able to estimate costs
- Output friendly: able to estimate what and how much you get from it
- Name: geographic; measure(s); alpha-numeric; other.

ONE PLANNER'S IDEA OF WHERE PLANS COME FROM:

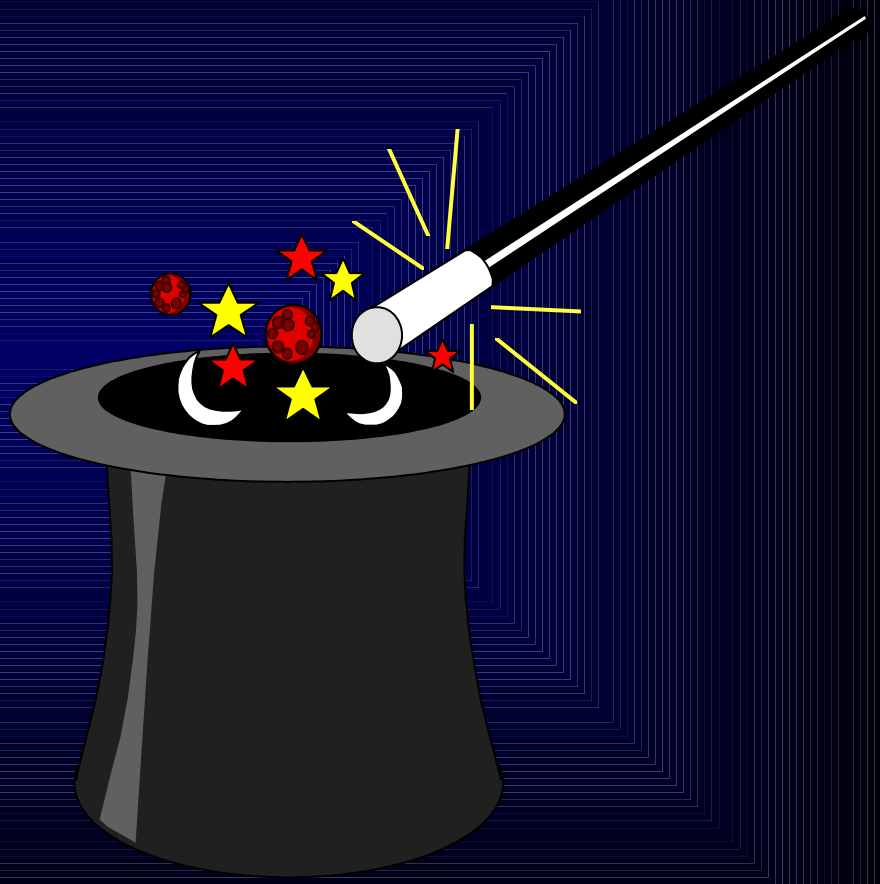
" Just about anywhere. Local sponsor suggestions, public inputs, study team members, your left frontal lobe, etc.! They may not be feasible or have a Federal interest, but an alternative plan is an alternative plan."

Combining Measures into Plans

There must be more than just dumb luck, awkwardness or conniving

What is a Formulation Strategy?

- A systematic way of combining measures into plans based upon selected criteria
- It may include a statement of measures that will not be pursued and why



Formulation Strategies - Inspiration

- Institutional
  - Laws, policies, regional plans and other institutional realities
  - Federal, state and local
- Technical
  - Science based
- Public
  - Issues important to stakeholders
  - Local objectives and constraints

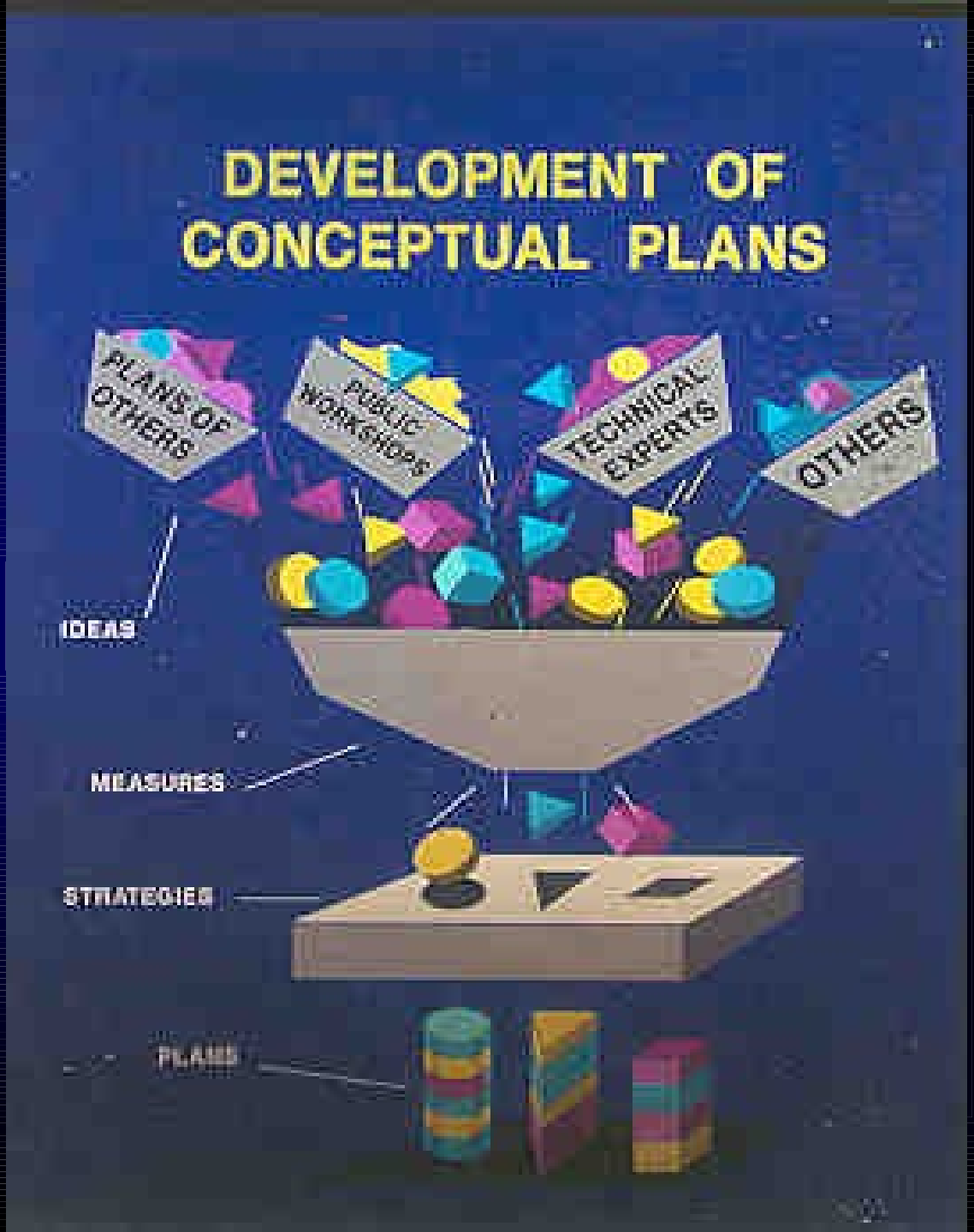
Formulation Strategies - How

- All possible combinations
- Start small and add increments
- Start large and eliminate increments
- Start with the most cost-effective
- Inter-dependencies of measures
- Sponsor supplied alternative
- Others as appropriate

Formulation Strategies

- A strategy is formed by combining the inspiration and the how.
- The strategy becomes the recipe or instructions for formulating a plan.
- During future iterations of the planning steps the strategy may become more precise.

Combining Measures into Plans



Combining Measures into Plans

Where to start?

- With screened management measures
- Focus on combinability, dependency and mutual exclusion
- Now apply a formulation strategy
- Candidate NED, NER and NED/NER Plans are special cases-but important ones

Environmental Sustainability

- Results when economic and environmental considerations are effectively balanced through the life cycle of project planning, design, construction, operations and maintenance to improve the quality of the natural and human environment for present and future generations.
- The Corps will achieve a better balance between economic and environmental benefits through the formulation of alternative plans that integrate both National Economic Development (NED) outputs and National Environmental Restoration (NER) outputs in accordance with existing planning regulations.

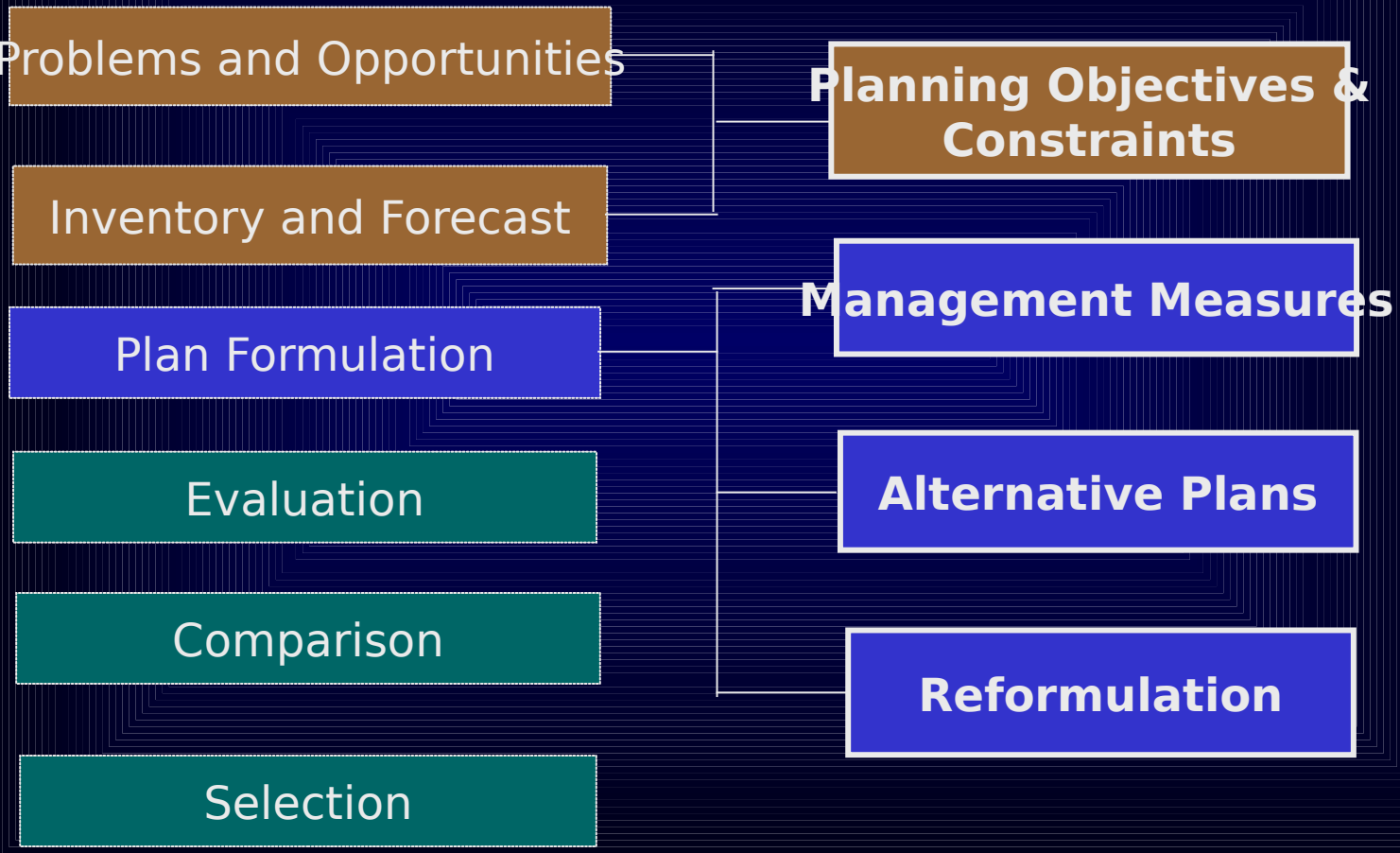
Corps Watershed Principles

- Sustainability
- Coordination
- Interagency cooperation
- Adaptive management
- Interdisciplinary teams
- Forecasting future water resource use demands
- Public involvement
- Trade-off evaluation
- Leveraging resources/ program integration

What to do with the Plans

- Evaluate first to determine beneficial and adverse impacts
- Compare and apply screening criteria
  - Threshold levels of the 4 formulation criteria can be used for screening.
  - Apply other study specific screening criteria.
- Go back to the stakeholders
  - Coordination is a continuing process
  - Make sure everyone who has an interest or stake has been involved
    - Was some important impact or concern missed?
    - Is there a plan out there that was missed?
    - How can the plans be better?

Planning Steps and Plan Formulation



Three Major Steps

- Develop appropriate measures
- First iteration where measures are combined into plans using a formulation strategy
- Subsequent iterations where plans are reformulated to better meet the formulation criteria

Reformulation of Alternative Plans

- Why reformulate?
  - Bring in new ideas
  - Fix any problems with the screened plans
  - Avoid/mitigate adverse impacts
  - Improve performance against the 4 Formulation Criteria
  - Take advantage of other opportunities created by each plan
- Where to start?
  - Public Input
  - Refined planning objectives and constraints
  - Results from additional inventory and forecasts
  - Alternative plans that survived screening

Reformulate to Avoid/Mitigate Adverse Impacts

- Safety
- Cultural Resources
- Induced Flooding
- Fish and Wildlife habitat
- Community Cohesion
- Hazards
- Business Disruption
- Other

Reformulate to Better Meet the Four Formulation Criteria

- Completeness
- Effectiveness
- Efficiency
- Acceptability

Reformulate for Opportunities

- Ecosystem Restoration
- Recreation
- Beach nourishment
- Beneficial use, esp. dredging
- Sand and gravel
- Wildlife Sanctuaries

Take Away Points

- Plan formulation is the art of creating plans to address objectives and constraints and a skill that you acquire
- Plan formulation is an integral part of the six-step planning process and is a core competency of the Corps
- Plan formulation is an iterative process
  - Identify measures
  - Formulate plans
  - Reformulate plans
- Formulation strategies highlight the what and how to build plans from measures

“In our profession, a plan that everyone dislikes for different reasons is a success. A plan everyone dislikes for the same reason is a failure. And, a plan that everyone likes for the same reason is an act of God.”

Richard Carson, Pacific Northwest planner and writer.

DISCUSSION ? ?